Old Effort, New Push

Tech Transfer Gets the Spotlight

Sandia's technology transfer program took on a new look in January with the establishment of a separate department to handle its activities. Glenn Kuswa was named to head Technology Transfer and Management Department 4030, with responsibility for seeing that Sandia technological developments and know-how get transferred to private enterprise and state and local government.

Technology transfer is nothing new to the Labs. Long before the Stevenson-Wydler Act (passed by Congress in 1980) mandated the transfer of technology from government-funded agencies to the private sector, Sandia was transferring technology to the outside world.

Corry McDonald (ret.) headed the Labs' "technology utilization program" from the late '60s through 1980, when he retired. The Office of Industrial Cooperation (OIC) — part of Technical Information Department 3150 — was established in 1968. Corry was named to head the OIC, which was responsible for spreading the word and fielding inquiries on Sandia developments. He transferred to the standards organization in the early 1970s and took the tech transfer function with him (though it was no longer called OIC). He later moved to an engineering information group, but still had the tech transfer responsibility.

After Corry's retirement, Bob Stromberg (4030) was named technology transfer officer in October 1981. (At that time Bob was a member of Management Staff 400.) "Early on, it was apparent to me that individual Sandians were doing a tremendous job of tech transfer on their own," says Bob.

"Stevenson-Wydler required that government labs with an R&D budget of over $20 million appoint a person to serve as a tech transfer contact — a person who would also be responsible for record keeping on transfer of the agency's technology to the outside. That's where I came into the picture," says Bob. "I was pleasantly surprised at the time to discover that Sandia's staff was doing an outstanding job of getting the word out on Labs developments. Charlie Winter [400] and I decided to let them keep on doing what they'd been doing for many years, and that I would be a kind of 'middleman' if help was needed."

Bob is continuing his technology transfer involvement in Department 4030, along with several others: Jim Corey and Frances Armijo, whom Glenn describes as responsible for "export control" of Sandia technology advances; and Terri Ripi, who handles data processing and record keeping. Pam Goldberger, who's been department secretary, recently was promoted to a new job in Dept. 4010.

Now that Glenn has had time to settle into the new job, LAB NEWS interviewed him to find out about his views on technology transfer and possible shifts in direction for this activity. Following are excerpts:

LN: Why the increasing emphasis on technology transfer? What are some of the reasons for all the Congressional attention over the last several years?

GK: The U.S. is seeing increasing industrial competitiveness from overseas. That's probably the heart of the problem. People are worried that our technological edge might be eroding. To help stem the tide, we need to use our federal resources more efficiently. Transfer of commercially useful technology advances from tax-funded government agencies [including the national laboratories] to the private sector can provide an effective boost to our economy.

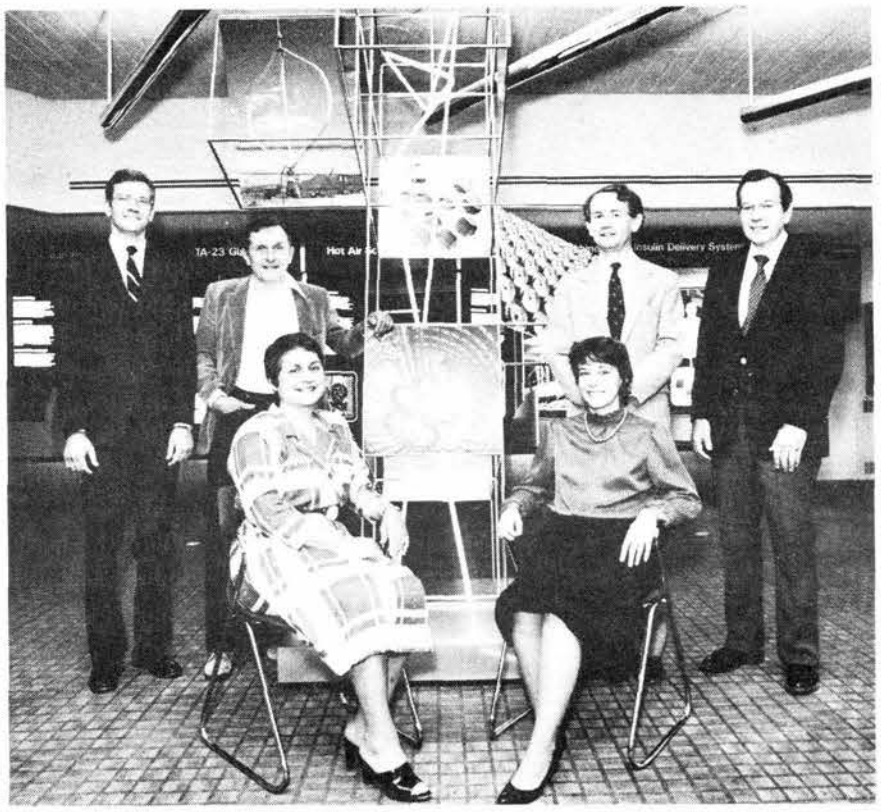
Our biggest challenge is putting together marriages between technologies that exist here at Sandia and the potential users of those technologies.

LN: What do you see as your biggest challenge?

GK: Putting together marriages between technologies that exist here at Sandia and the potential users of those technologies. These marriages happen in a number of ways, but the most effective ways involve personal contact. For example, person-to-person meetings at technical conferences might result in a visit by someone to Sandia to learn more about our work. Or, in some cases, Sandians might actually spend time at other companies to transfer technology.

The technology transfer staff looks at Sandia's traditional areas of expertise and helps push out that knowledge to local or national enterprises that can use help in those areas. Many of our tech-

(Continued on Page Six)



SOME OF THE MEMBERS of Technology Transfer and Management Department 4030 got together recently with representatives from Patent and Licensing Department 4050 at the Technology Transfer Center. The two departments work hand in hand on tech transfer matters. Standing (l to r) are Kurt Olsen (4050), Joe Szymanski (4051), Glenn Kuswa, and Bob Stromberg (both 4030). Seated are Terri Ripi (4030) and Pam Goldberger (4030 until recently, when she moved to 4010).

LAB NEWS

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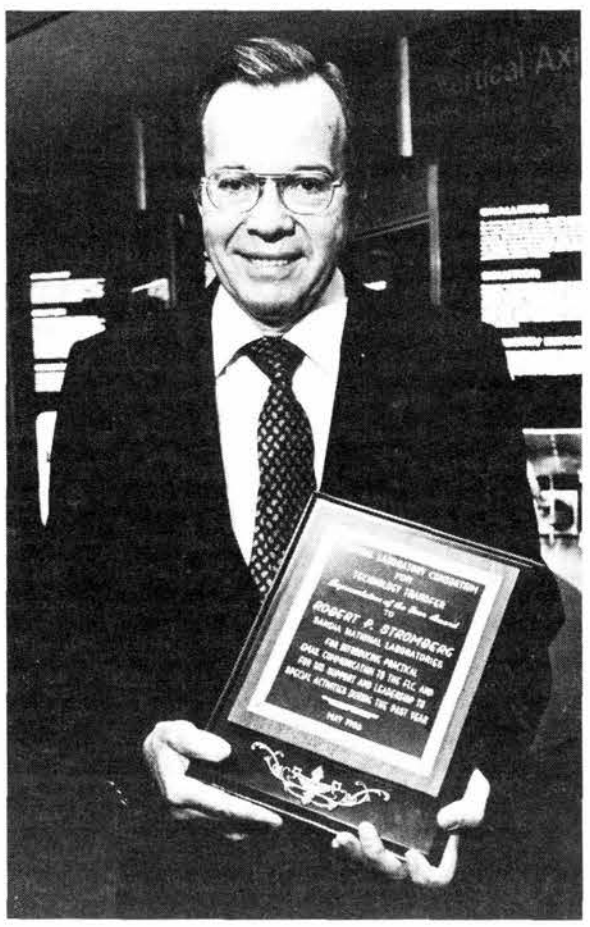

BOB STROMBERG (4030) received the "Representative of the Year" award from the Federal Laboratory Consortium at its annual meeting in Annapolis May 6-8. (The FLC, whose purpose is to enhance technology transfer at federal labs, has 120 members, all of whom are associated with tech transfer at their respective labs.) Bob was instrumental in setting up an electronic mail system to improve communication among FLC members. His award citation reads: "For introducing practical E-mail communication to the FLC, and for his support and leadership [of] special activities during the past year."

Today's the Day!

Fitness Day '86 kicks off at noon today on the Parade Ground. Come on out, join the bikers or the joggers/walkers and be eligible for the drawing for prizes, or watch the demos (jump rope, mini-trampoline) and be inspired into svelteness. And listen to the music, buy or bring a sandwich, and enjoy MC Dr. Larry Clevenger (3330).

If it's raining today, Fitness Day is on June 6 — and there are lots of sandwiches for sale in Bldg. 800, Bldg. 822, and the Coronado Club!

Take Note

The success of the "Soviet Threat Technology" meeting at Sandia's Technology Transfer Center last year has resulted in awards to Walter Rutledge (1635) and Gary Polansky (1633) from the American Institute of Aeronautics and Astronautics at its Annual Meeting and International Aerospace Exhibit in Arlington, Va., on May 1. Walter, AIAA Albuquerque Section Chairman, was presented with a certificate, and Gary, AIAA Albuquerque Section Event Chairman, was presented with a plaque.

* * *

Frances Stohl and Howard Stephens (both 6254) won the Richard A. Glenn Award for best paper at the National Chemical Society Meeting in Chicago last September. "Deactivation of Direct Coal Liquefaction Catalysts by Carbonaceous Deposits," presented by Frances at the meeting, was chosen out of 115 as best paper in coal-related research.

* * *

The Smithsonian Institution will present lectures, films, and seminars in Albuquerque June 4-9. E. T. Wooldridge, Chairman of the Department of Aeronautics, National Air and Space Museum, will present a seminar/slide presentation, "Winged Wonders: The Story of the Flying Wings," on June 7 at the National Atomic Museum from 2-5 p.m. The seminar fee is $20. Brochures containing ticket information and schedules of other Smithsonian events are available by visiting or calling the National Atomic Museum, 4-4225.

* * *

Dave Bennett (6415) was re-elected to a three-year term on the Board of Directors of the National Rifle Association of America at the Association's annual meeting in New Orleans, La., last month.

* * *

A lecture/discussion, "Strategic Defense - Technical Issues and Options," will be held at noon and again at 4 p.m., May 28, at UNM's Continuing Education Center as the first in a technical symposium series, "New Directions in Defense Science and Technology," sponsored by Booz, Allen & Hamilton, Inc. The speaker will be Julian Davidson, a leading authority on ballistic missile defense and strategic defense policy and technology. The series is free to technical professionals in the Albuquerque area. To attend, call Booz, Allen & Hamilton, Inc. at 247-8722. Reservations are required.

LAB NEWS

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SANDIA NATIONAL LABORATORIES

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Antojitos

A Damnation upon Defrauding Drivers Lots of cyclist reaction, some of it favorable, to last issue's column on bikers vs. traffic on Eubank and Wyoming. More on that later, when the asphalt has settled. Today it's the motorists' turn -- on the spit.

Not all motorists. Just those who are using Southern Avenue in the mornings and depending on soft-hearted drivers of vehicles southbound on Eubank to let them into the Baseward traffic flow.

First of all, it's unsafe. As the encroacher off Southern peers north waiting for a southbound sucker to come along, he/she isn't looking south. Admittedly, there are comparatively few cars northbound in the mornings, but there are certainly enough of them to collide with a car suddenly pulling across the northbound lanes. And how about the likelihood of one Eubank vehicle rear-ending another that suddenly stops for no other reason than misguided charity? (Would the Eubank motorist who's being "polite" end up in court if there were such a collision? Do we live in a litigious society?)

Second, it's unnecessary. Eubank-Southern is not officially an area of "alternate merge," a technique at which Sandians excel and of which Sandians are justly proud. And it shouldn't be an alternate merge site -- it isn't as if there's no reasonable way to avoid the Eubank-Southern intersection. (Yes, I know there's a handful of employees who live south of Central for whom the Southern route makes sense -- except for the danger -- but I'm castigating the employees who live in the Northeast Heights.)

Third, it's unfair. As the loaded words above indicate, I feel that those of us who wait our turn through the lights and signals at Central and Eubank are being exploited by those who come from north of Central, go south on Juan Tabo, then west on Southern -- and try to con us into opening a space in the Eubank traffic so they can slip in. (And, after all, there are two left turn lanes off Central these days.)

Anyone for making the Southern invaders wait long enough on Monday that their little scheme is no longer a shortcut? ●BH

* * *

Dame donde me siente que yo hallaré donde me acueste. (Spanish: Give me a place to sit, for I will find a place to lie down, OR Give 'em an inch and they'll take a mile.)

Watch Nancy Finley (3523) cook up something with Julia Gabaldon (3523) on Julia's TV program, "Somos Bilingues." Nancy will prepare the Spanish dish "paella" May 25 at 8:30 a.m. on Channel 7.

* * *

Even though the end of the school year is in sight, it's not too late to sign up for day camp. Camp Fire Youth Services of Greater Albuquerque is offering a summer day camp program for children of working parents. Camp Okadona will be held from June 16 to August 22 at two locations: Menaul School (301 Menaul Blvd. NE) and St. Martin's Hall at the University of Albuquerque. Camp hours are from 7 a.m. to 6 p.m. Activities include swimming, arts and crafts, library program, overnights, and field trips. The cost is $50/week or $225/session (two five-week sessions). Registration and prepayment are due June 6. Reservation forms are available in the LAB NEWS office. For more information, call Charlotte Geving or Jill Topper at the Camp Fire Office, 842-8787.

* * *

When looking for entertainment for the whole family, check out the Music Superfest on Sunday, June 8 at the New Mexico State Fairgrounds. Music will be presented by 35 to 40 groups, including jazz, country western, polka, barbershop quartets, rock, and more. In addition to the day-long music, the festival will feature arts and crafts, dances, raffles, tethered balloon rides, and international foods. There will also be a children's stage highlighting young talent. Festival hours are from 10 a.m. to 7 p.m. Admission is $6 for the whole family, $3 per adult, $2 for children under 16 and seniors over 65 years of age. The Music Superfest is organized by the Greater Albuquerque Chamber of Commerce and the New Mexico State Fair. Proceeds will benefit the Career Guidance Institute.

* * *

The American Red Cross needs your help. Since July 1985, there has been an unprecedented number of hurricanes, mudslides, floods, fires, and now tornadoes. As a result, American Red Cross is facing a projected deficit of over $40,000,000 and is asking the community to donate funds for disaster relief. United Way of Albuquerque has approved this call for donations to the American Red Cross Emergency Disaster Relief Fund. All donations will go to benefit American disaster victims. Send your check to American Red Cross, Mid-Rio Grande Chapter, P.O. Box 80250, Albuquerque, NM 87198.

* * *

Jason Pike, loan account executive at New Mexico Federal Savings & Loan Assn., will conduct a workshop on home refinancing on Wednesday, May 28, from 5-6:30 p.m. in the Coronado Club's Eldorado room. He'll cover items like costs of refinancing, current interest rates (the lowest in seven years), refinancing effects on monthly payments, etc. Bring a calculator if you have one, and a note to yourself on how much you now pay on property taxes and home insurance.

* * *

Presbyterian Heart Institute is sponsoring free CPR training beginning at 9 a.m. on Memorial Day at the Albuquerque Sports Stadium as part of Project Heart Start. Training is for anyone 13 years old or older. Just show up at the stadium or preregister by calling 841-WELL before 5 p.m. today. (And see "Fun & Games" for the associated fun run.)

Catalytic Device Ignites Hydrogen Early

In a loss-of-coolant (LOC) accident in a nuclear reactor, hydrogen could accumulate to concentrations that would allow it to explode. Therefore, many containment buildings for nuclear reactors have electric igniters designed to burn off the hydrogen before the gas reaches levels that could be explosive. But what if the power is off?

Researchers in Combustion Sciences Department 8350 have developed a catalytic igniter that complements the electric igniters in preventing hydrogen explosions.

"As a part of a larger study, sponsored by the NRC [Nuclear Regulatory Commission], of hydrogen combustion hazards in nuclear reactor accidents, we investigated the feasibility of a device that would require no electricity but would ignite and burn low levels of hydrogen before the gas accumulated to an explosive concentration," says Larry Thorne of Combustion Chemistry Division 8353. "We made good progress; a series of igniter designs in November 1984 culminated in patent disclosure in early 1985."

Most nuclear reactors use water as the heat exchange fluid, or coolant. If the water is interrupted at some point in its cycle by a system failure, superheated steam is generated in the core. This steam can react rapidly with various core materials to produce large quantities of hydrogen gas. The idea behind intentional ignition is to burn away hydrogen safely at low concentrations (in the 5 to 10 percent range). Hydrogen/air mixtures with hydrogen concentrations greater than 13 percent can be explosive.

Bill McLean (now 8360) and David Chandler (8353) did some early experimental work on a catalytic igniter that achieved ignition at hydrogen concentrations of 11 percent. To provide a greater margin of safety, Larry worked with Joanne Volponi (also 8353) on various igniter designs. They ultimately designed one that ignited hydrogen at concentrations of only 5.5 percent. With Lloyd Nelson and Ken Guay (both 6427), Larry tested the igniter in the Fully Instrumented Test System at Albuquerque in late 1985. The tests proved that the device would ignite large-volume hydrogen/air mixtures.

The catalytic igniter is a small, disk-shaped device made of parts costing less than $50 in production quantities. The device uses the chemical energy of the hydrogen/air mixture itself to cause ignition. It is self-activating; no operator is required. To provide for the greatest safety, a number of igniters would be placed at various locations around the containment structure, depending on the vessel's size and shape.

Although tests have not been performed under simulated accident conditions, all tests to date indicate that the catalytic igniter could supplement electric igniters.

CATALYTIC IGNITER and two of its developers, Larry Thorne and Joanne Volponi (both 8353). Igniter is made of platinum wires and a substrate coated with a catalyst (fine particles of platinum). It prevents build-up of hydrogen in nuclear reactors after a loss-of-coolant accident.

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Retiring

Bob St. Hilaire (8445) 20 yrs.

Sympathy

To Ted Hebebrand (8262) on the death of his father in Manteca, May 1.

To Wes Estill (8441) on the death of his mother in Boulder, Colo., April 21.

To Pat Buxton (8024) on the death of her mother in Walnut Grove, Minn., May 2.

THREE LIVERMORE SANDIANS were honored at a Corporate Volunteerism Council recognition luncheon April 25 for their outstanding service to community groups over the years. From left, VP Dick Claassen (8000) is shown with recipients Dick Finn (8272), who has been involved with many 4-H activities, served as a county fair judge, and is trained as a county volunteer fireman; Cindy English (8201), who now serves on the Livermore Library Board and works with the Tri-Valley Haven for Women; and Duncan Tanner (8471), who takes vacation time each year to coordinate the computer system for the KQED Auction.

Events Calendar

May 23-June 8 — "A Doll's House: A Chicana Story" (adapted from Ibsen for NM audiences); 8 p.m. Fri.-Sat., 3 p.m. Sun.; La Compania de Teatro de Alburquerque, Nuestro Teatro (3211 Central NE), 256-7164.

May 23-25 — "Dark of the Moon," based on the Barbara Allen legend; 8 p.m. Fri.-Sat., 6 p.m. Sun.; Vortex Theatre (Buena Vista & Central), 247-8600.

May 23-June 1 — "Lovers and Other Strangers"; 8 p.m. Tues.-Fri., 6 & 9 p.m. Sat., 2 p.m. matinee Sun.; Albuquerque Little Theatre, 242-4750.

May 23-25 — Second Annual Wiminfest, a festival in celebration of women's music, comedy, and culture; 8:15 p.m. Fri.-Sat., 8 p.m. Sun.; KiMo, 266-0022.

May 24 — Dance recital, Hayden School of Ballet, 8 p.m., Popejoy Hall, free.

May 24-25 — Antique and Collectible Show, Agricultural Bldg., NM State Fairgrounds, 883-6986.

May 28 — Dance concert, Jana's Academy of Music and Dance; 6 p.m., Popejoy Hall, 884-8154.

May 29 — Los Gatos, variety music; 12-1 p.m., Civic Plaza.

May 29 — Jose Salazar, classical guitar; 8 p.m., KiMo, 844-0146 or 884-5606.

May 29 — "A Doll's House," La Compania de Teatro de Alburquerque at South Broadway Cultural Center, free, 8 p.m.

May 30 — Bayou Seco, Cajun and Southwestern music; 5:30-9 p.m., Civic Plaza.

May 30-31 — "Images of New Mexico: A Film Event"; 8 p.m. Fri.; 10 a.m., 2 p.m., & 7:30 p.m. Sat.; KiMo, tickets at Salt of the Earth Bookstore.

May 30-June 1 — Very Special Arts New Mexico Spring Festival; 10 a.m.-2 p.m. Fri., 10 a.m.-4 p.m. Sat., 12-4 p.m., Sun.; downtown Albuquerque at 5th and Copper, 766-4888.

May 31 — New Mexico Symphony Orchestra Pops Concert, "Music Under the Stars"; 8:15 p.m., First Plaza, 842-8565.

May 31 — Mike Haley dance recital, Popejoy, 299-7671.

May 31-June 1 — Third Annual Albuquerque Fiestas, University of Albuquerque (St. Joseph's Place), noon-6 p.m., free, 842-9003.

May 31 & June 1 — Council of Albuquerque Garden Clubs Spring Flower Show; 3-6 p.m. Sat., 10 a.m.-4 p.m. Sun.; Albuquerque Garden Center (12120 Lomas NE).

Sympathy

To Al Chavez (3543) on the death of his mother-in-law in Los Lunas, April 22.

To Dennis Ghiglia (2644) on the death of his father in California, May 7.

Death

Roger Chaffin, manager of Device Research Department 1140, died May 12 after a lengthy illness. He was 45 years old.

Roger had been at the Labs 19 years.

Survivors include his wife and three daughters.

General Attorney Named

ROBERT KESTENBAUM (4000)

Robert Kestenbaum, currently general attorney at AT&T Communications, will become General Attorney 4000 on Aug. 1.

Kestenbaum has been an attorney with AT&T (or Western Electric) since 1964 and has wide federal contract experience. His current responsibilities include business planning and marketing strategies; unregulated and untariffed services; and business and marketing activities and relations with other AT&T entities, unaffiliated vendors, and intermediaries, all for AT&T Communications. He also handles legal work for AT&T's Data Processing and Corporate Telecommunications organization. In addition, he is a full professor of law at the New York University law school where he has taught federal procurement law since 1965.

He has a BS in mechanical engineering from Purdue and a doctor of jurisprudence from the University of Michigan. He is a member of the New York, Michigan, and patent and trademark bars.

He and his wife Sheila have one child and will move to Albuquerque in July.

Unit Values

AT&T Savings Plans Unit Values, March 31, 1986

	Unit Value	Units Credited Per $
SPSE (Savings Plan for Salaried Employees)		
AT&T Shares	1.4633	.6833
Government Obligations	4.5409	.2202
Equity Portfolio	4.1611	.2403
Guaranteed Interest Fund	2.0916	.4780
Diversified Telephone Portfolio	5.8561	----*
SSP (Savings and Security Plan - Non-Salaried Employees)		
AT&T Shares	1.4790	.6761
Guaranteed Interest Fund	2.2066	.4531
Diversified Telephone Portfolio	2.7277	----*
VCP (Voluntary Contribution Plan)		
AT&T Shares	1.435	.696
Mutual Fund Equity Portfolio	2.623	.381
Money Market Fund	1.357	.736
Guaranteed Interest Fund	1.530	.653
Diversified Telephone Portfolio	1.853	----*

*Since there are no new units credited to this fund there is no longer a need for a "units credited per dollar" figure.

THREE FIRST-PLACE RIBBONS for Walter Dickenman (right; 3155) include Best Color on the Job, Photographers' Choice, and Best of Show — for his shot of the first PBFA I firing — at the 27th Annual Conference of Industrial Photographers of the Southwest. Russell Smith's (3155) helicopter won 3rd place in the commercial category. Both Sandians were just elected as '87 officers of the photo group, as were Leroy Perea (7556), Odessa West and Louis Archuleta (both 3155), Elliott Harris and Richard Hodges (both ret.).

Supervisory Appointments

EDWARD GRAHAM, JR., to manager of Project Engineering and Customer Interface Department 2150, effective April 1.

Ed joined the Labs in 1964 after earning a BS in EE from Mississippi State. He was a member of the Technical Development Program, earning an MS in EE from the University of New Mexico in 1966. He worked with the Electromagnetic Susceptibility Division and the Scientific Computing Division before going on to earn a PhD in EE from North Carolina State University in 1970.

Ed was appointed supervisor of Bipolar Integrated Circuits and Microwave Devices Division 2112 in February 1976. More recently, he was supervisor of CRM Program Development/Management Division 2151.

Ed's spare time activities include amateur radio work, woodworking, and hiking. He lives in the NE Heights.

JERRY FREEDMAN (DMTS) to supervisor of Transportation Systems Technology and Analysis Division 6322, effective April 1.

Jerry joined the Labs in February 1965 with an MS in ME from the University of New Mexico. He was a member of the staff of the Dynamic Analysis Division where his work included warhead modeling and the design and fielding of structures experiments at the Nevada Test Site.

In 1971 he earned his PhD in theoretical and applied mechanics at Northwestern University under Sandia's Doctoral Study Program. Jerry has served as an adjunct professor of Mechanical Engineering at UNM, and has been a member of the American Society of Mechanical Engineers since 1965.

As a project leader in nuclear materials transportation from 1975 to 1980, Jerry initiated and led several spent fuel and waste transportation system design activities. In 1978, he was on loan to DOE Headquarters, Germantown, Md., where he served as technical advisor to a DOE team that formulated and implemented a centralized DOE nuclear materials transportation R&D program. Since 1980, he has been a project leader in Pre-Phase 3 weapon design, where his work has focused on the Navy's ASWSOW (Sea Lance) and nuclear depth/strike bomb (ND/SB) programs.

Jerry's leisure time activities include reading, jogging, and car maintenance. He and his wife Mary and one daughter live in the NE Heights.

Unusual Vacation

Liberian Dust On Tenderfoot Parents

When a coup attempt failed last Nov. 12, blood flowed in Liberia. The coup leader had grown up in the village of Zorgowee and his mother continued living there. "Her cottage was gutted the same day he was killed," says Nick DeLollis (ret.).

Nick and his wife Dot had frequently promised their daughter Lisa that they would visit her in Zorgowee, where she lives and works as a Peace Corps volunteer. Now they were even more eager to see for themselves how she had fared during those days of uncertainty.

January seemed a good time to make the trip. There were many people to thank for taking care of Lisa while the government quashed the rebellion. "Bhur Sonkalay, one of her students in the village, had helped Lisa hide in her dark, shuttered house while soldiers prowled outside after the coup attempt," says Dot. Afterward, when the soldiers came back to arrest the coup leader's relatives, "Lisa fled to a Catholic boarding school, where six nuns sheltered her for a week," says Nick. Then there was the Baptist missionary, a shortwave ham who had relayed messages from their daughter.

Nick is no stranger to travel. A world-class expert on adhesives back in his Sandia days, Nick went on a lot of business trips. "It's one thing to visit Western Europe, as I did many times for 13 years," says Nick. "West Africa is another story. The medical requirements included two shots for typhoid and one each for yellow fever, cholera, and hepatitis. Once a week we took chloroquine pills for malaria. Tonic — sans gin — served as a booster."

Visas by Candlelight

The dilapidated capital city of Monrovia set the itinerant scene. "During the dry season, electricity is available for only three hours, from about 7 to 10 p.m.," says Nick. "And throughout the country, water is available at some odd timetable which we never solved." At midday, they found themselves applying for visas by candlelight.

(For a time after the coup, the U.S. Embassy had housed Lisa at the military mission in Monrovia. There she felt reverse culture shock on being exposed to wall-to-wall carpeting, hot and cold running water, a toilet seat, television, and air conditioning.)

Two months after the rebellion, the atmosphere still was unsettling. "Soldiers carrying submachine guns manned military checkpoints — placed every 10-20 miles and at the border," says Nick.

In the jungle, however, "we felt like a page out of *National Geographic*," says Dot. They paddled 30 miles in fiberglass canoes and trekked along an elephant path with teenagers carrying supplies on their heads. They came eye-to-red-eye with crocodiles. They kept a lookout for any of the 23 poisonous snakes that are found in Liberia. It was a perfect place for implementing Kipling's "how to kill a mamba" recipe from *Riki-Tiki-Tavi*.

On another trip, Nick and Dot had the rare experience of traveling in a 9-person van — only this one was loaded up with 23 people, all their luggage, and a live chicken. Nick tried to pay the fare with a $50 bill which the driver could not change. "An older woman asked if she could see a $50 bill," Dot reminisces. "Nick asked her if she would run away with him for $50. 'No.' 'For $100?' 'No. I run away with you for nothing!' "

Quarter's Worth

The country seemed to be running on a "quarter economy," whereby a bagful of U.S. quarters was useful — for weeks on end — in obtaining all the necessary services, including getting by the soldiers. "We were besieged by overzealous would-be porters at the airport," says Dot. Two quarters apiece was the tab for overnight lodging at the leper colony in Ganta.

The couple stayed at Lutheran, Methodist, and Baptist guest houses in Liberia, went to Mass in Catholic churches, and visited with various Christian missionaries. "Everyone there is very ecumenical," says Dot. "Church choirs were accompanied by gourd rattling, drumming, and rhythmic clapping. And we visited several lovely [Moslem] mosques where the women wore flowing chiffon robes and scarves."

All the roads — except for one paved route — were rutted and covered with a red dust that still is the couple's most pervasive souvenir of the cross-country trek. "*Red Dust on Green Parents* would be the title of the book I could write about this trip," says Nick.

Nick was roundly hooted at by the boys in Zorgowee when his family trooped over to the deep well and filled a bucket that Nick carried home on his head. That was because "bossman carry water," a task the Liberians solemnly believe is "woman's work," he says. "Men and boys just don't carry water there." He'd like to believe he set a good example.

Continued from Page One

Tech Transfer: New Faces, New Directions

nical organizations do substantial technology transfer on their own. One role of this department is to help encourage and coordinate this activity. We help formulate policies, and tell people what current policies are. Tech transfer is most often a team operation, in which others provide the actual information. We [department people] frequently help make connections.

LN: Are the national laboratories in a unique position to transfer technology to industry?

GK: Yes. One reason is simple. We are tax-supported and no-profit, so our results can usually be given to others with no negative impact on the Labs.

Other reasons are more complex. Industry is interested in fairly short-term profits; smaller companies, especially, can't afford large, standing R&D organizations whose work may or may not pay off. They must answer their production problems this year or next year, and rarely project their needs more than a few years in advance. This is particularly true when interest rates are high and industrial executives have to choose between a possible long-term profit based on research, or a more certain near-term result.

The national labs are structured with a fairly stable technical population. We must take on projects that involve high risk over a long period of time for both our defense and energy assignments — projects that neither large nor small private companies could afford. And we've developed islands of technical expertise that are second to none in the world — expertise necessary to support the nuclear weapons program, as well as our energy and reactor programs. Our tightly run, long-term areas of research offer a significant pool of knowledge that is available to industry as a spin-off from our defense work or is the primary objective of our energy work.

The key question for financial survival in private industry is: Can we commercialize a development or idea in a relatively short period of time?

LN: Do you have a list of priorities for your new department? And what changes in technology transfer policy do you see coming?

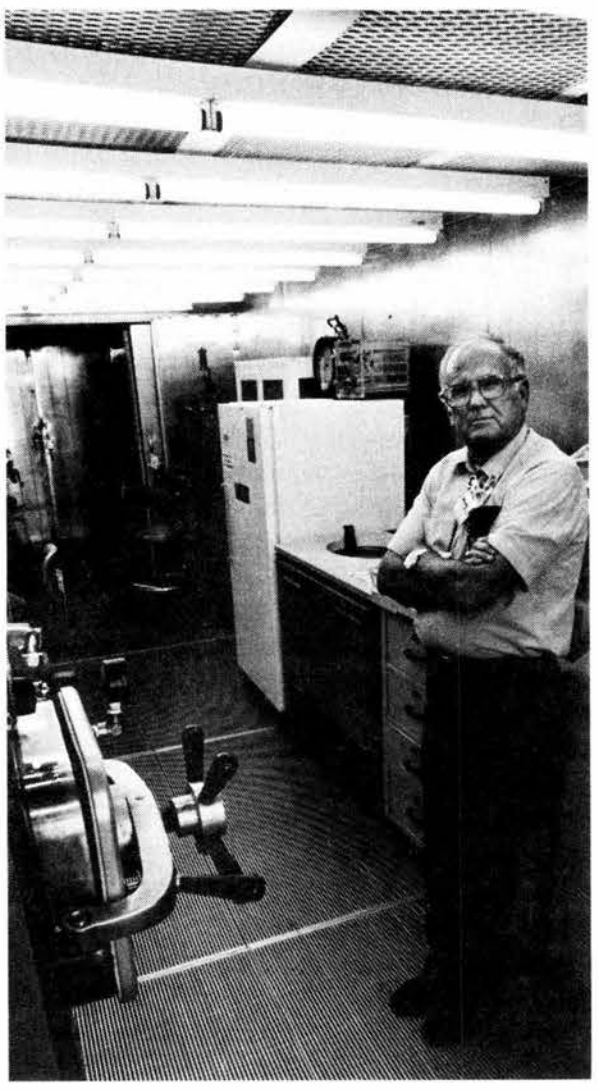
GK: My priority list is not necessarily weighted for ultimate importance, because we have tended to do the most obvious things first. One of my long-term goals is to increase the interest of our employees in disclosing inventions, and to help them get those inventions into the commercial marketplace. Traditionally the patent process has been fairly slow. This has meant that an inventor couldn't publish promptly and get patent protection at the same time. A scientist shouldn't have to "disguise" his invention in order to get publication credit in a relatively short period of time.

We've sometimes emphasized publications more than patents, but I see some very nice trends toward equal emphasis. For example, some of our

A Few Success Stories

Over the years, hundreds of Sandia ideas and developments have been transferred to the private sector. Some have had a startling impact on what goes on in the world around us.

Perhaps the granddaddy of them all is the laminar air flow clean room, invented by Willis Whitfield (ret.) back in 1961. Willis designed the clean room based on an elegantly simple idea: "sweep" the room with a uniform flow of filtered air that removes virtually all the airborne contamination in the room. The laminar flow concept resulted in an environment 100 times cleaner than conventional clean rooms of the era, and soon became the basis for a new federal standard for clean rooms and stations.



A COUPLE OF YEARS before he retired in 1985, Willis Whitfield posed for LAB NEWS in the original clean room, put together in the 1960s and still going strong. Willis, who was dubbed the "*real* Mr. Clean" by one of the national networks, demonstrated the room's essential features: a large uniform flow of filtered air sweeps down from the ceiling and removes airborne particles via the floor grating. Willis's work on the laminar air flow concept began innocuously enough in 1959 when he was asked to investigate the inadequacy of clean rooms to maintain proper cleanliness levels for the production of Sandia weapon components. Laminar flow, called "a perfect answer to clean room contamination" by Jim Mitchell (3160) in a LAB NEWS article published Sept. 16, 1983, has never been improved by competitors or refinements — remarkable, considering the heady, high-tech atmosphere we've experienced since the early 1960s.

Laminar flow clean rooms affected a tremendous number and variety of industries, most notably microelectronics fabrication and pharmaceuticals. Other organizations were affected as well: hospitals (operating rooms), aerospace contractors, biological and food processing concerns, and more. Clean rooms are now a $200 to $300 million-a-year business.

A hot-air solder leveler invented by T. A. Allen (7484) and Bob Sylvester in the early 70s revolutionized the fabrication of printed wiring boards. Using air as a leveler had been attempted for years, but the air oxidized the solder. The device designed by T. A. and Bob used the hot air from specially designed "air knives" (slots) to force the flux across the boards in such a way that the excess flux leveled the solder as it went. The development effort cost less than $20,000, but the leveler has cut circuit board processing time by 90 percent. The device spawned three new industries: construction and sale of the machines themselves (a $30 million-a-year business), the solder coating service industry in the U.S. and abroad (now amounts to some $50 to $120 million in sales in the U.S. alone), and the manufacturing and sales of chemical fluxes and cleaners for hot-air leveling machines.

In a LAB NEWS interview (see related story), Glenn Kuswa mentioned that Sandia technology has resulted in the savings of hundreds of millions of dollars a year to the petroleum industry. One of the most notable of these developments was a discovery by Dan Aeschliman (6256) and an employee of Husky Oil Co. of a phenomenon called "wellbore refluxing," which allows the escape of thermal energy from steam injected through an insulated casing down a wellbore to soften oil. (Steam flooding is used to enhance the recovery of heavy oil, and may also prove to be the long-sought commercially feasible technique for recovering the light oil still remaining in "depleted" oil fields.) The discovery was difficult, but the solution was simple: insulate the couplings of the tubes through which the steam is traveling, not just the tubes themselves. A two-inch-tall, doughnut-shaped piece of plastic insulation placed around the inside wall of the coupling does it. Dan estimated last year that the U.S. could save more than $1 billion over the next decade by using the inexpensive insulated couplings in its enhanced oil recovery program (see LAB NEWS, May 10, 1985).

Sandia received an award of excellence from the American Wind Energy Association in 1983 for "cost effective research and development and commercially important technology transfer." The citation read: "Sandia National Laboratories . . . has brought Darrieus-type wind turbine technology from a position of novelty in 1973 to commercial importance in 1983. Sandia has used less than $14 million of DOE funds in that 10-year period, but is responsible for six operating prototypes and, through the wind industry's most effective technology transfer program, has been instrumental in commercialization of VAWT [Vertical Axis Wind Turbine] technology by at least six companies."

There have been many success stories. These are only a few of them.

BACK IN 1983, an award of excellence from the American Wind Energy Assn. citing Sandia for "the wind industry's most effective technology transfer program" was presented to Dick Braasch (1621; right), then supervisor of Wind Energy Research Division 6225. Paul Vosburgh, president of VAWTPOWER Inc. (Albuquerque) and a member of the AWEA awards committee, made the presentation.

GLENN KUSWA, manager of Dept. 4030, peers through one of the exhibits in the Technology Transfer Center's lobby. Glenn's department was established in January to handle tech transfer activities.

vice presidents are now publicly recognizing the importance of patents by personally presenting patent certificates to inventors.

Both Sandia and the DOE have to work as fast as possible to process patent applications. If employees have a *dis*incentive [a patent process delay], they won't disclose their inventions. One of the best Sandia inventions of which I am aware is out in the literature with no prospect for patent protection. It'll probably be used by people, and if it is, that's an effective transfer. In some cases, however, the utilization of the technology can be enhanced by some patent protection.

LN: On the subject of patents, what about the fact that Sandians give up their patent rights as a condition of employment? Doesn't that stifle incentive to come up with ideas that might be useful to the private sector?

GK: Many companies have similar policies. However, some people have turned down jobs at Sandia because of this requirement. The situation is especially noticeable at Sandia Livermore, because just across the street at LLNL, individual employees have easier access to patent rights.

It's true that our employees' inventions are patented in the name of DOE, but DOE — and Sandia as well — can relinquish patent rights in favor of the inventor in certain cases. There aren't a lot of those cases on the record, but there will be more in the future, I'm sure.

Right now it's sort of an all-or-nothing situation. If an inventor wants to pursue an invention that's not classified and in which the company doesn't have an interest, he or she can get a personal waiver to take the idea, leave the company, and form a business around the idea. Then the development can't be obtained by other private firms, though the government may still use it for its own purposes. For example, one of our employees left Sandia to form a company that makes a variety of sensors based on vibrating quartz crystal technology. It's a very interesting enterprise. That's technology transfer at its best, although it involves great personal risk. I might add it also may result in great gain. I hope we see more of these success stories in the future.

Recent legislation indicates a trend toward increased patent rights for the operators of federally funded labs and inventors at those labs. It's too early to know yet, but such patent rights may provide lab operators and inventors more incentive to commercialize federally funded inventions. LAB NEWS may have a follow-up story here in the future.

We welcome any changes that would provide incentives and flexibility for us and our laboratory staff to transfer technology in areas that don't degrade our national security.

Proposed legislation would give inventors at federally operated labs a share of licensing royalties. Though this legislation would not apply to labs such as Sandia that are operated by a profit-making contractor, it may well influence changes here over the long haul.

One of our main goals is to foster increased awareness of the importance of patents to our staff. We welcome any changes that would provide flexibility for us and our laboratory staff to transfer technology in areas that don't degrade our national security. We believe we are well equipped to apply existing security rules to assure that no sensitive inventions are released. And we can suggest several practical ways to assure fairness in selecting recipients of new technology.

LN: What about know-how and techniques? Aren't these also of potential value to the private sector, along with hardware?

GK: We do frequently transfer know-how to industry. In many cases know-how is not patentable, and so far there is no provision for transferring that on any exclusive basis to industry. It may take a great deal of effort to turn know-how into a commercial idea that's viable. If you give it to everybody, you might just give it to nobody, since it may be foolish for a company to develop an idea to commercialization and then stand by while everybody in the world is in a position to compete.

The bottom line is to strengthen U.S. industry in all areas.

LN: Are we targeting specific recipients for Sandia technology?

GK: We are a national laboratory. Therefore, first and foremost, we must target recipients in the U.S. As a defense laboratory, we have many opportunities to spin off developments to military contractors, as well as to the civilian sector. The bottom line is to strengthen U.S. industry in all areas. Transfer of technology among sectors is good for the economy, too, because we can accomplish more with fewer tax dollars.

We also should be more aggressive about getting our technology out locally to organizations in the Rio Grande corridor. After all, these people are our neighbors, and that's part of being a good neighbor. We support relevant research at UNM. We can encourage other industries to do the same.

We will also continue to build our involvement with Rio Tech. Rio Tech was formed for the purpose of developing the relationships among, and productivity of, New Mexico's "triad" — the universities, industry, and the national labs. As a relatively new organization, Rio Tech is in the process of formulating a strategy.

LN: How do falling oil prices affect our energy research and its transfer to the outside?

GK: That's one of our leading problems because many organizations throughout the world react more by panic than by anticipation. We are mandated to do the long-term research that industry won't do. We have to impress upon Congress the need for many forms of energy research when some people think we no longer have an oil or energy problem. If you analyze the resources that are being discovered each year and the use rate, the picture is dismal for the future of domestic oil.

. . . many organizations throughout the world react more by panic than by anticipation.

We must demonstrate to the public how successful our past energy research has been, and also that there could well be an impending domestic oil crisis whose impact can be reduced through more research. I'd like to see the staff write more papers on our past successes — "revisit them" — so the public realizes that energy programs are an exceedingly good investment. These stories are not well-known outside the Labs. For example, few people realize that Sandia drilling technology and Sandia thermal insulation technology have resulted in savings of hundreds of millions of dol-

(Continued on Next Page)

Want to Help the Tech Transfer Program? Here's How—

LAB NEWS asked Glenn Kuswa for a rundown on what employees could do to help Sandia's technology transfer program. Here's what we learned:

- When you're out there among 'em (on a trip, at a party, etc.), get in the habit of finding out what technologies others can use.
- Keep log books when you're working on a new development, process, whatever. Have a person who understands the work sign and date your book when you believe you are discovering new material; this gives you some protection as far as the patent process is concerned.
- Disclose your inventions. If it looks like a disclosure is going to interfere with publication, talk to either Glenn or Kurt Olsen (Patent and Licensing Department 4050). They can arrange expedited treatment.
- Tell Glenn about any one-sided technology transfer to a foreign country.
- Alert Glenn's department about any technology whose transfer could possibly lead to nuclear weapon proliferation. Keep your ear to the ground in this regard. For instance, if you're asked questions at a technical conference about a specific piece of equipment, think before you answer. Could the device —used with something else—enhance proliferation in any way?
- If you're a would-be entrepreneur, sign up for an INTEC (or UNM) course in technical innovation and entrepreneurship. (Glenn hopes to offer an INTEC course in the fall.)
- Write more papers that revisit our past successes and contributions in technology transfer.
- Inform Department 4030 about successful transfers. Glenn's interested in all of them, because they demonstrate to DOE that Sandia is doing a good job on technology transfer. In turn, DOE uses this information in its reports to Congress.
- If you need technology that may exist in some other federal laboratory, Glenn's department can help you locate it through contacts with the Federal Laboratory Consortium.
- Contact Department 4030 with any questions you might have about the technology transfer program.

Continued from Page Seven

Tech Transfer

lars a year to the petroleum industry. And these were programs that were funded by relatively small amounts of money — a few million dollars, in contrast to the hundreds of millions saved.

Our sister labs should work in the same way [revisiting successes]; they've also had successes with too little lasting credit. One element of technology transfer is public relations, and I have been pleased to see Sandia's activity in this area become increasingly effective over the years.

LN: What kinds of energy research do you see as particularly useful right now?

GK: Several areas come to mind. The current oil glut is causing us to close down and cap off our marginal wells. Generally when those wells are shut down for even a short period of time, they are difficult, if not impossible, to bring back into

. . . few people realize that Sandia drilling technology and Sandia thermal insulation technology have resulted in savings of hundreds of millions of dollars a year to the petroleum industry.

production. That reduces reserves; when oil becomes scarce once more, we'll have even less of it to turn to. So research on recovering marginal wells is an activity we might examine. We're also realistic enough to know that we'll have to be burning more coal as cleanly as possible now and in the future, and that's a good area of research for us. This is, of course, a major effort for SNLL's Combustion Research Facility [CRF], and it has special meaning for New Mexico, also, because of our large coal reserves.

I hope that funding for nuclear power research holds up for the long term. I believe most of the people at Sandia strongly support nuclear power, but the political situation does not bode well for that power source in this country. The recent reactor accident in the USSR will also be a setback for the industry. I see the day when we will have to rely on more nuclear power, and we may have to import that technology from Europe and Japan. That's tragic, because it may mean the loss of American jobs.

It's important to convince the populace and Congress that now is the time to do more, not less, energy research — especially research to replace oil. An intensive information effort by the national labs is one way to do this.

LN: What about technology transfer from our weapons R&D programs?

GK: This is the area on which we are working hardest now. Generally, there were obvious recipients for output from our energy programs. Such is not always the case for inventions that originate in the weapons programs. However, I believe we can become much more successful at transferring some of that technology, too, because of the extreme breadth, diversity, and innovativeness of the work that we do.

LN: What are some difficulties in the technology transfer business?

GK: The most obvious stems from the classified nature of much of our work. Laws mandate technical transfer from government labs. DOE labs are exempt from some of these laws, largely on the premise that much of the work is classified. We have a strong group in each of the weapon labs to determine classification levels of data. We certainly examine classification concerns before we think of any other aspect of technology transfer.

Another concern is preventing export of information or goods that are critical from the military standpoint. That's where Jim Corey and Frances Armijo [both 4030] get involved. They're responsible for export control work and consult extensively with government agencies involved with export control policy. That kind of consultation helps set our policies regarding foreign requests for Sandia technology.

FRANCES ARMIJO AND JIM COREY (4030) worry about the unwanted export of technologies that might be critical from the military point of view. Jim is Sandia representative for the Militarily Critical Technologies List, and Frances is program manager for the Sandia portion of a foreign technology study called "Socrates."

Another problem is the fact that we must send inventions — our "intellectual property" — to DOE in Washington, where the inventions are advertised and distributed. The people there are very competent, but they can't have the intimate connection with the inventor, potential markets, etc., that we have. If we were given title to inventions as a laboratory, we believe we could get the

Right now government agencies are living with too many different sets of rules on technology transfer.

ideas out more systematically and efficiently.

Right now government agencies are living with too many different sets of rules on technology transfer. For instance, DoD has one set of rules, DOE another. It wouldn't be a bad idea to have uniformly standard policies throughout government; we could still pay scrupulous attention to classification matters. And along with the uniform policies, local control is desirable. This gives the inventor a better chance to share in what's going on.

We also need to make certain that we don't give away more to foreigners than we get from them. After all, the main idea of technology transfer is jobs for the U.S. We're very willing to talk to foreigners when there's a two-way exchange. Some of our more notable exchanges have involved research on reactor safety, a subject of mutual interest to all nations with nuclear power plants. The foreign nationals working out in our reactor area [Tech Area V] are a good example of this type of

We recognize that where risk is involved, rewards should be greater, and we need to consider this factor when we recommend a course of action for a new technology.

cooperation. The data from this kind of work are shared openly and freely.

LN: Any other comments?

GK: We recognize that each case — or potential case — of technology transfer is unique. Our goals include the establishment of fair, flexible guidelines. We recognize that where risk is involved, rewards should be greater, and we need to consider this factor when we recommend a course of action for a new technology.

Sandia's capabilities in a wide range of disciplines make us a "natural" for transferring technology to the private sector and other government agencies. Department 4030 is here to help the process in any way possible.

VIA

volunteers in action

Here are a couple of current volunteer opportunities for employees, retirees, and family members. If you would like more information, call Karen Shane (4-3268).

NEW MEXICO SKI TOURING CLUB is again planning to develop and maintain trails in the Jemez: Saturday, May 31—NMSTC will be looking for a route for a new trail from Hwy. 4 to the top of Thompson Ridge. Good portion of the day probably will be spent bushwhacking on hillsides, so wear appropriate clothing and boots. Saturday, June 14—NMSTC will explore and flag logging roads and possibly some short trail sections in the western part of the Los Griegos area.

AMERICAN CANCER SOCIETY is conducting a different kind of cancer drive—one that asks for time rather than money. ACS's "Road to Recovery" is seeking volunteers to donate their time to drive a cancer patient to treatment and home. Road to Recovery volunteers are needed Mondays through Fridays from 9 to 5. The volunteer's schedule will be accommodated —whether it's once a month or twice a week. ACS also offers partial reimbursement to cover the cost of gas.

Congratulations

To David (7482) Schroeder and Liz Lujan, married in Isleta Pueblo, April 19.

To Adele (2831) and Michael Montoya, a son, Gabriel Michael, April 24.

To Joni and Steve (2512) Hallett, a son, Kyle Douglas, May 4.

To Jeanne and John (1512) Torczynski, a son, Peter Vincent, May 7.

Fun & Games

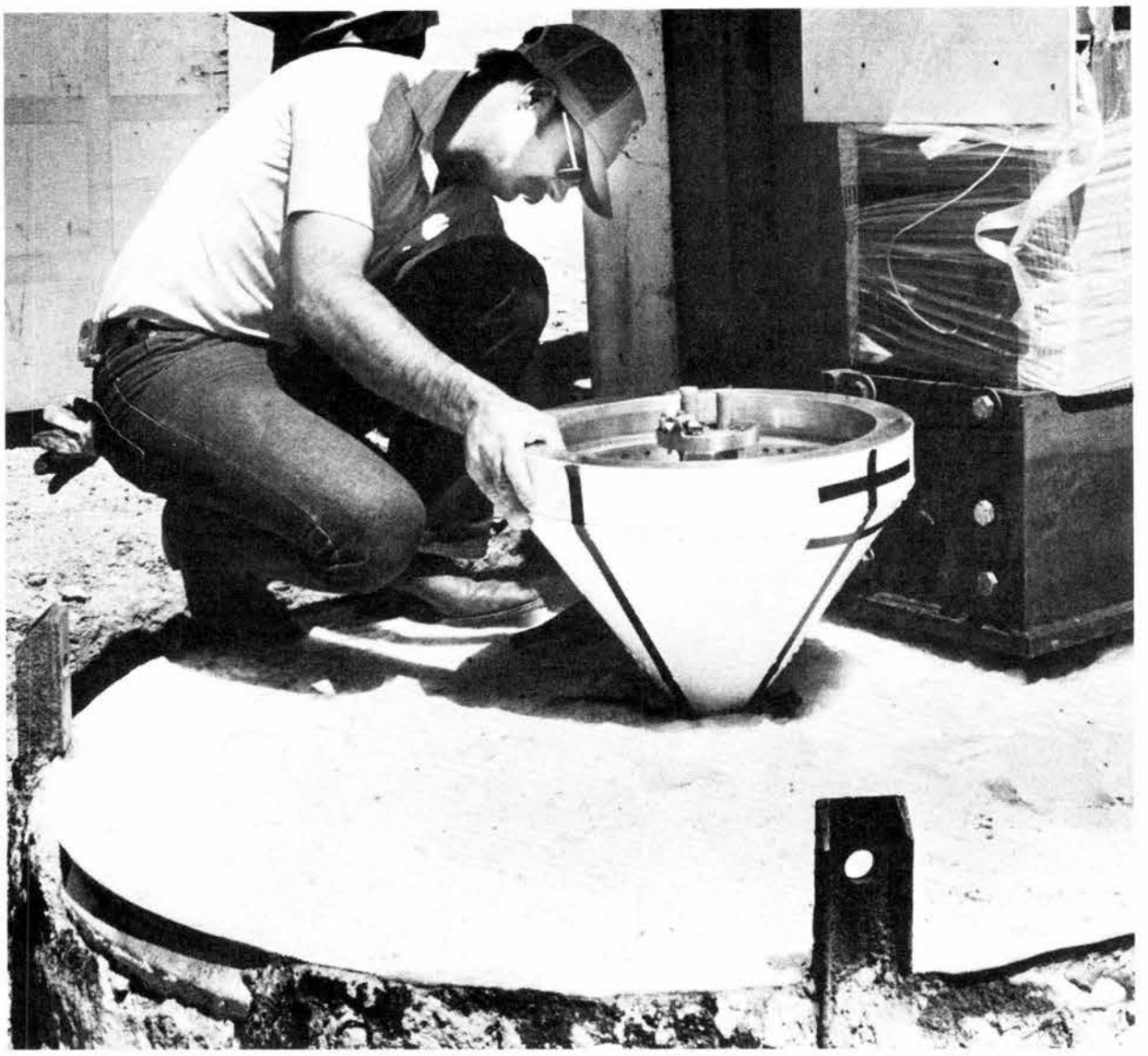
Golf — SWGA held its first major tournament at Los Altos on May 3. Flight A results: Ree Gerchow (122) won low net, two strokes ahead of Pat Anderson (7522). Low putts went to Ruth Wright (ret.). Flight B results: Low net went to Lucy Gray (SNL/Dep.) with Tess Reis (ret.) second. Nellie Gerchow (SNL/Dep.) had fewest putts. The next major competition will be on June 7 at UNM South.

* * *

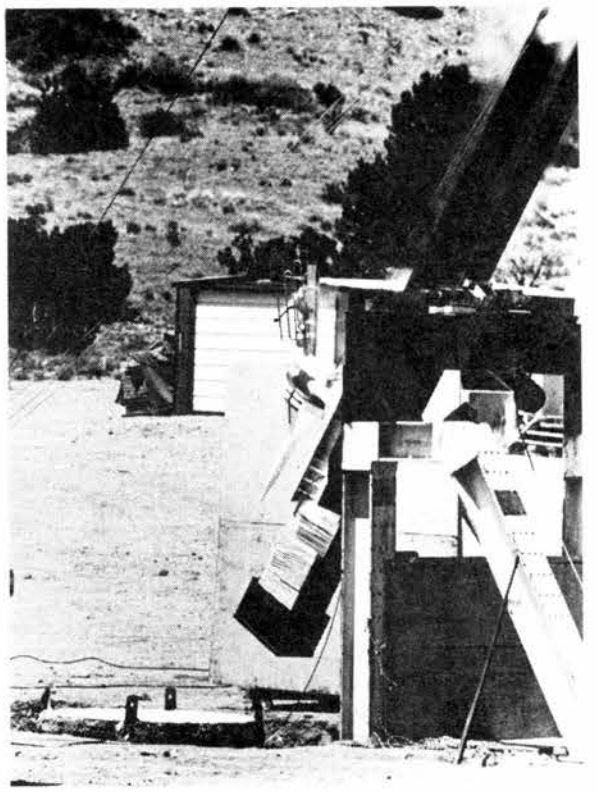
Running — Bonnie Roudabush (312) won the women's race in the 1986 Corporate Cup road races May 10 by running the 5K course in slightly more than 19 minutes. Sandia won the 20-29 category in the Division I women's team competition. While at the London Marathon recently with her father, Rueben Vigil, Bonnie set a marathon personal record of 3:09.

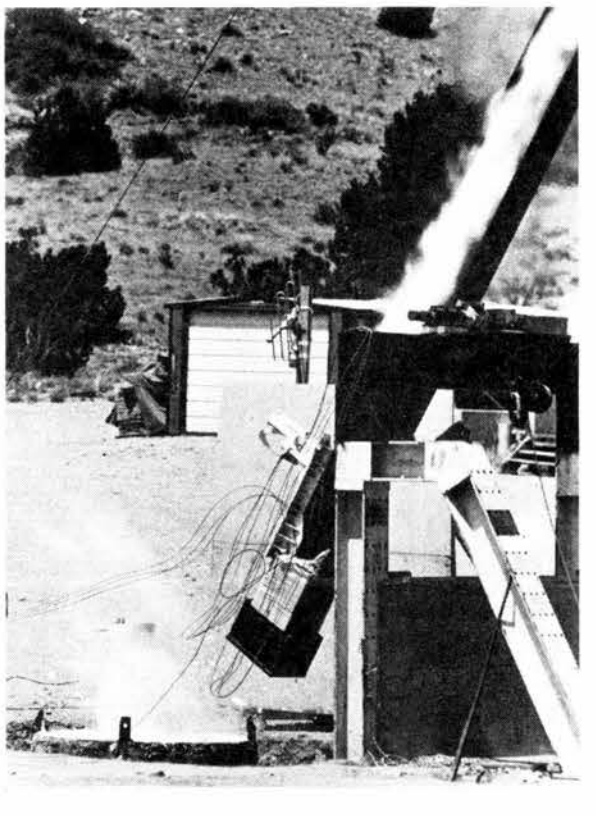
* * *

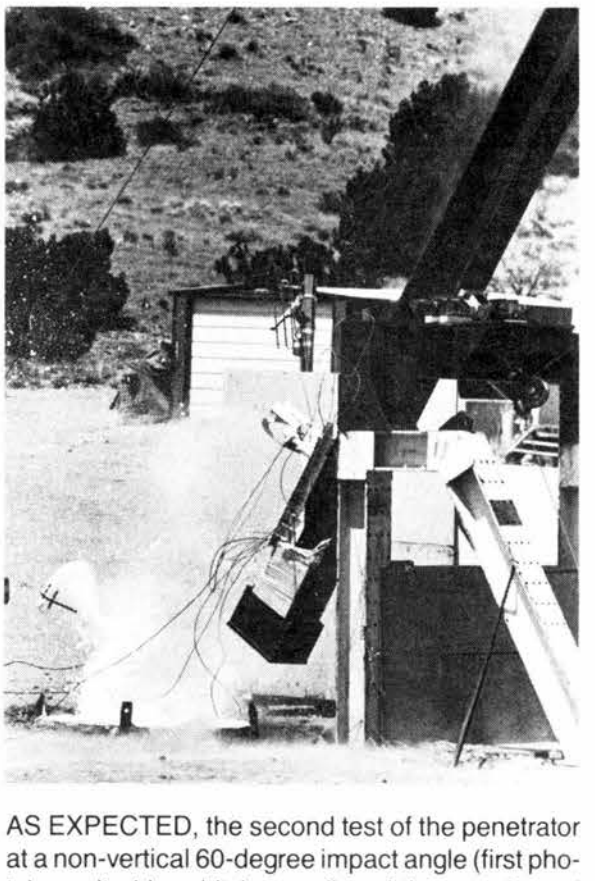
More Running — The Project Heart Start Fun Run/Walk is set for Memorial Day beginning at 8 a.m. at the Albuquerque Sports Stadium. Registration fee is $5; $7 the day of the race. Entry forms available at Presbyterian Hospital, Kaseman Presbyterian Hospital, Northside Presbyterian Hospital, Gil's Runners Shoe World, Gardenswartz Sportz, and Sun Sports, Inc.



STRAIGHT ON! Project leader Ed Schaub (1611) from Tom James' Advanced Systems group examines a simulated comet probe after it was shot almost vertically (two-degree angle of attack) into a 5' x 5' cylinder of ice at Coyote Canyon on May 7. The instrumented penetrator went in straight and true at 90 mph, and stuck in the ice. Other Sandians (not shown) involved in the NASA-funded project are Steve Heffelfinger (7535), who runs the test site; Dennis Floyd (7531), the "ice guy"; and Ray Wood (5144), who is in charge of telemetry and data collection.







AS EXPECTED, the second test of the penetrator at a non-vertical 60-degree impact angle (first photo) resulted in a hit (second) and then a rebound (third). These tests demonstrate that a nose-tip anchor will be required to prevent rebound, according to Wayne Young (1611), co-investigator on the NASA team. The purpose of these tests was to provide the data needed to support the design effort in preparation for the fly-by of the Temple or Kopf comets in 1992. The comet probe's unusual shape is designed to penetrate both hard ice and soft snow.

Welcome

Albuquerque

Virginia Acton (22)
Judith Case (22)
Sylvia Hammond (22)
Charlotte Hunt (21)
Lori Ann Jackson-Frye (22)
Monica Schlick (21)
Phyllis Treml (21)
Patricia Jo Vigil (21)

Nebraska

James Voytko (7473)

New Mexico

Sheila Wilson (22)

Pennsylvania

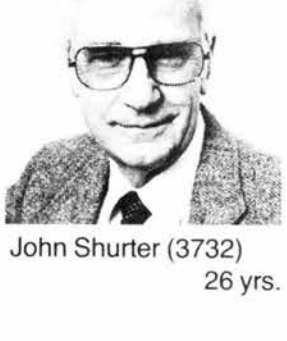
David Cocain (7525)

Tennessee

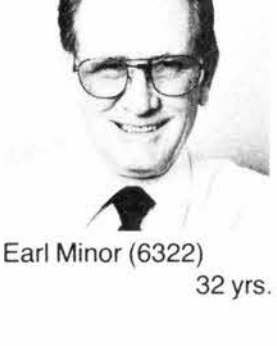
Richard Wavrik (7543)

RETIRING

Jerry Jercinovic (3440)
40 yrs.



John Shurter (3732)
26 yrs.



Earl Minor (6322)
32 yrs.

Medical Corner

World Remains Tough For Adult Children Of Alcoholics

by Lynne Judge (3330)

It's tough growing up in a family in which one or both of your parents are addicted to alcohol or drugs — or both.

Your world is askew. You learn to survive and cope, but you don't learn how to live a "normal," healthy life. You are eager to leave home, begin your own life, and "make good." Your strongest vow is "It'll never happen to me."

Now, here you are, in the middle of adulthood. What's happening? Your life is still askew. *You* are unable to cope. You have tried so hard but now it's happening to you!

Perhaps you're beginning to realize that, most of the time, you feel a lot of non-specific guilt. And, along with the guilt, you feel anxiety—perhaps nebulous, perhaps diffuse, but anxiety, nevertheless. Maybe you have difficulty with intimate relationships; maybe it's hard to recognize and express your own feelings.

You find yourself taking care of people, whether or not they're really need to be cared for. You find yourself being a "*re*actor" rather than an actor in your own life. You have difficulty having fun because life seems so serious. But worst of all, you have a tremendous amount of self-hate so you beat up on yourself and put yourself down.

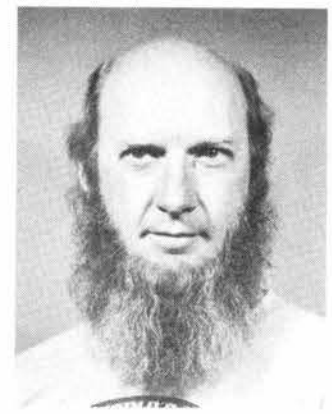
If this description seems to fit you and if you think either of your parents were alcoholic or drug-addicted, there is hope and help through Sandia's Alcoholism Program. Call me at 4-3993.

MILEPOSTS
LAB NEWS

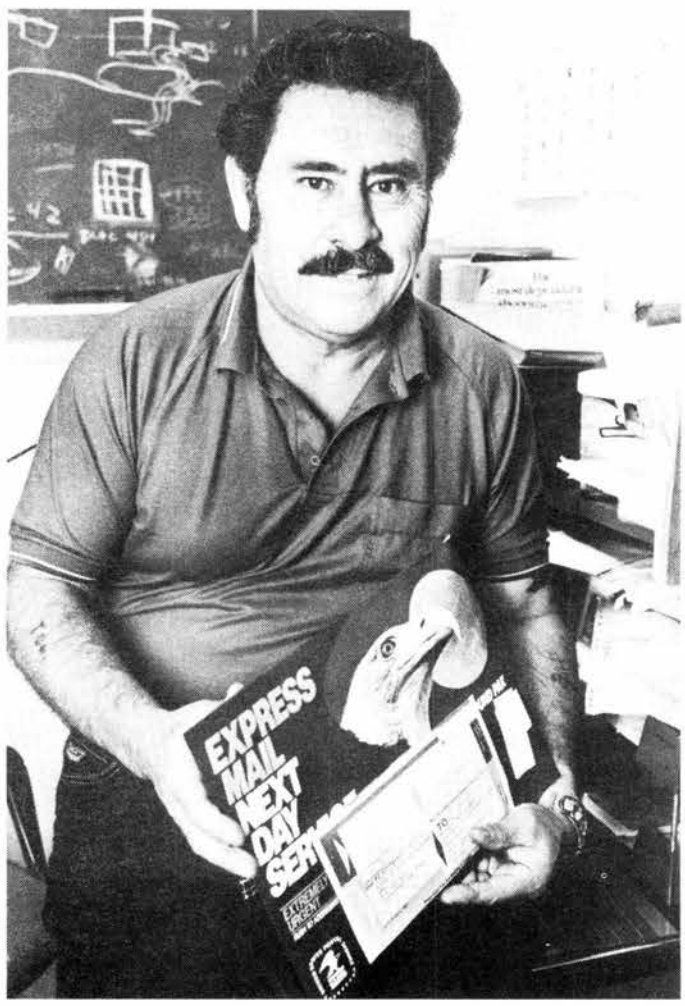
MAY 1986

Clory Valdez (4021) 35

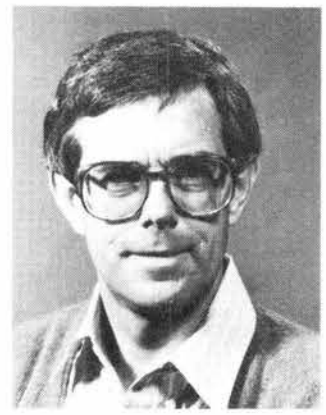
Darlene West (8161) 10



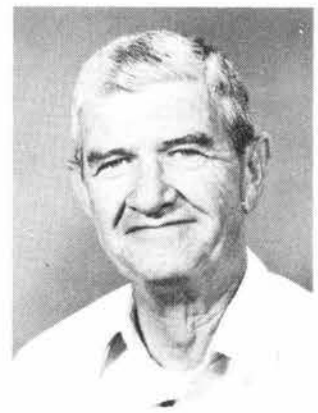
Dan Buller (1111) 10



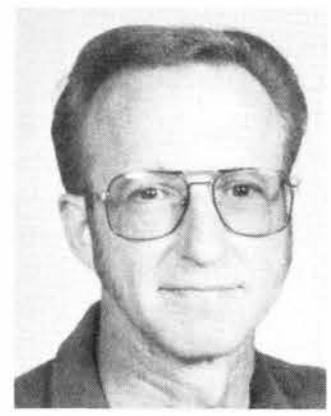
Tony Lopez (3154) 35



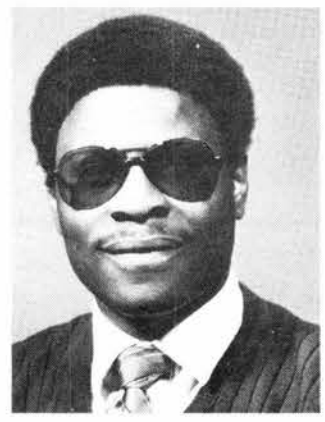
Rod Geer (3161) 10



Thomas Dragoo (3155) 20

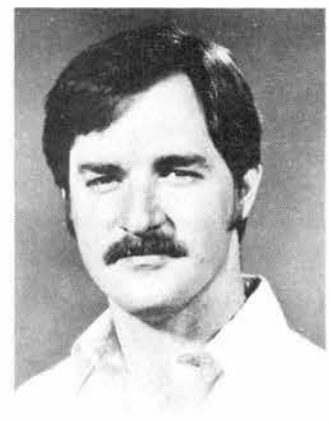


Bill Rego (8263) 20

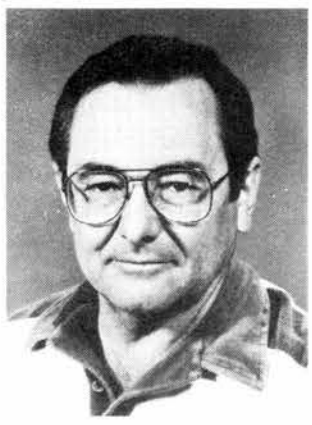


David Samuel (2855) 10

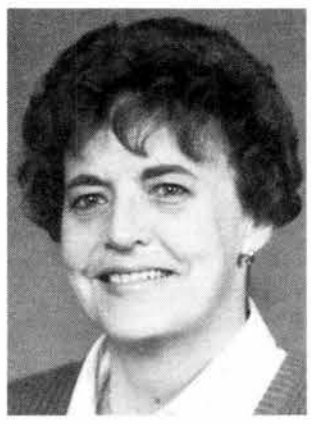
George Cosgrove (8184) 25



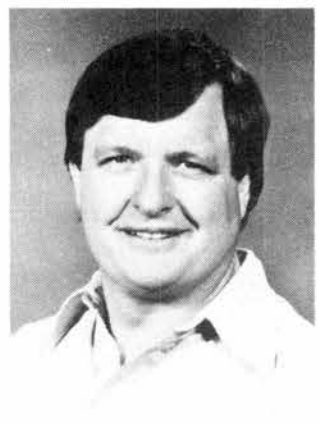
Gary Webb (2331) 10



Gene Aronson (2646) 30

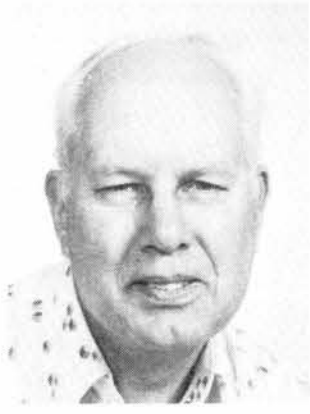


Mickey Banfield (8273) 20

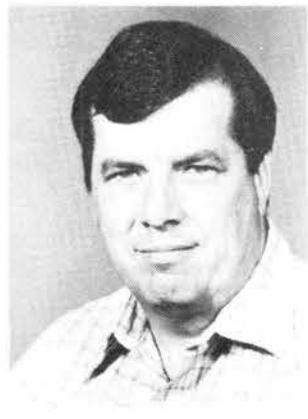


Ollie Davis (2854) 20

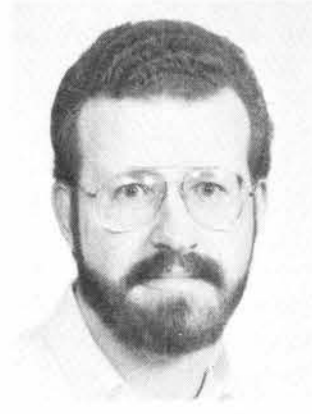
Dody Hoffman (3741) 30



Vic Krause (8184) 20



John Jewell (2122) 20



Dennis Beyer (8163) 10

Deadline: Friday noon before week of publication unless changed by holiday. Mail to Div. 3162.

Ad Rules

1. Limit 20 words, including last name and home phone.
2. Include organization and full name with each ad submission.
3. Submit each ad in writing. No phone-ins.
4. Use 8½ by 11-inch paper.
5. Use separate sheet for each ad category.
6. Type or print ads legibly; use only accepted abbreviations.
7. One ad per category per issue.
8. No more than two insertions of same ad.
9. No "For Rent" ads except for employees on temporary assignment.
10. No commercial ads.
11. For active and retired Sandians and DOE employees.
12. Housing listed for sale is available for occupancy without regard to race, creed, color, or national origin.

MISCELLANEOUS

MUSIC STAND, w/case, used once, $10. Demos, 294-6492.

WATERBED, soft side, queensize, dual temperature control, $200. Chavez, 265-3886.

BASS TRACKER, 16', 40 HP Mercury motor, tilt, trim, s.s. prop, chart recorder, more, $3500 firm. Stewart, 298-3332.

WATERBED, double-size frame, pedestal, liner, heater, no mattress, $40. Kovacic, 281-1754.

MOTORCYCLE COVER, vinyl-coated canvas, for motorcycle without windshield, fairing, or sissy bar, $20. Schkade, 292-5126.

MOVING, 19" portable and 25" console TVs, La-Z-Boy, tables, lamp, pictures, misc. small items. Chandler, 296-3323.

DESK, home or office, steel with woodgrain formica top, 1 file drawer, $45; Smith-Corona electric adding machine, $20. Freshour, 256-9168 after 5.

TIGA FUN CUP SAILBOARD, 210 liters, retractable dagger board, foot straps, 5.8 M^2 "Neil Pryde" sail, double-concave bottom, $495. Healer, 298-6967.

25-06 REMINGTON BDL RIFLE, w/reloading dies, 5 boxes of bullets, brass, all for $310. Rodriguez, 873-2391.

CAPACITOR MOTOR, 3 HP Dayton, 3600 rpm, 220 volts, ball-bearing, $100. Silverman, 298-1308.

DRYER, GE gas, $45; 19" color TV, $40; mini-refrigerator w/freezer, $40; wool rug, $125. Hogan, 292-5591.

JACKMAN STEEL WHEELS, four, 5-lug 15" x 7", w/Firestone 721 WSW steel-belted radials, $80 for all. O'Bryant, 268-9049.

GIRL'S FRENCH PROVINCIAL DRESSER w/mirror, 6-drawer, white, gold trim, $150. Miller, 243-0511.

MOTORCYCLE HELMET, Bell Star LTD II, 7 3/8, anthracite color, new in box, $80. Healer, 298-6967.

GRAND PIANO, Young Chang, 6' 1", 3 yrs. old, $5695 (new $9500). Lanes, 294-4889 after 6:30.

FENCE MATERIAL, 13 poles, 1-5/8" x 8'; 10 poles, 1-1/4" x 20'; chicken wire, 6' x 200'; hardware; $65 or firewood. Bundy, 821-1846.

CP/M COMPUTER w/Wordstar, 2-DSDD drives, amber monitor, $600; metal detector, Whites, $300; 12" diamond saw, Highland Park, $300. Murphy, 821-7785.

SAWYER 35mm slide projector w/zoom lens, remote control, several slide trays, $50. Miller, 255-7716.

TWO CASSETTE HOLDERS, hold 36 cassettes ea., can be mounted on wall; hanging lamp, blue globe; Hoover electric, professional, portable hair dryer; wig carrying case. Michele, 298-8576.

NORGE FROSTFREE REFRIGERATOR, w/icemaker, almond color, $200; Kenmore heavy-duty washer, white, $100. Haynes, 836-2168.

FREEZER, 16 cu. ft., Sears Kenmore, upright, used 2 years, $250. Lindell, 299-8452.

WIND DEFLECTOR; fifth wheel tailgate, fits GM trucks; H.D. motorcycle carrier, fits 4 in. square bumper; $150 firm for all. Baca, 265-2881.

ELECTRIC GUITAR, w/hard shell case, Electra twin pickup, humbuckers, ash body, $200. Benecke, 255-1356.

KLYSTRON RCA MI-26451 trmtr. & 26402 rcvr., $100 pair; EICO 460 scope, $125. Olajos, 256-1649, 4-8 p.m.

WORKBENCH w/vise, $40; dining/game table, 36" round, $50; TV stand, 2-shelf on wheels, $15. Hovorka, 299-0224.

DINETTE SET, wood, drop-leaf table, 4 plastic covered chairs, $150. Newman, 292-7351.

GARAGE, MOVING SALE, office and living room furniture, lamps, 25" TV, refrigerator, Russian samovar, household and garden items. Tilgner, 294-6464.

CAMERA, Pentax ME Super, w/50mm, 28mm, and zoom lenses, Vivitar flash, camera bag, cleaning kit, $300 OBO. Gottlieb, 298-9859.

SKI BOAT, 17 1/2' Dorsett, deep V hull, 150 HP Merc. outboard, some equipment included, needs canvas, tires, $3500. Sutton, 298-0001.

CRIB, Babyline double dropside, maple finish, mattress, cover, pad, sheets, $130. Ystesund, 256-3297.

TWO WROUGHT IRON SOFAS, matching, reversible; light oak corner table; upholstered chairs, one gray, one green. Campbell, 255-4271.

SADDLES, custom-made lady's western and sturdy adult roping, $125 ea. Rogers, 293-8201.

ONE-TENTH INTEREST in PA-28-180 Piper Cherokee, low flying costs, student pilots welcome, $1350. Trujillo, 293-2132.

TRAVEL TRAILER, '61 Air Stream, loaded, $5000. Wright, 865-9295.

BELL & HOWELL MOVIE PROJECTOR, Super 8, screen, camera and case, $200; IBM electric typewriter, standard, $150. Carlin, 292-5428.

NIKON ZOOM LENS (Nikkor), 100-300, new, $250. Harris, 892-6281.

APPLE IIe COMPUTER, Mitsubishi TV, computer disk, hutch chair, more, $2000; bike rack, Heath Kit TV. Stone, 344-1307.

COUCH, MATCHING CHAIR, $300; coffee table, $50. Vigil, 821-8059.

GAME TABLE, 4 brown vinyl armchairs, dark walnut finish, $110. Bornhoft, 821-7182.

KAYPRO II COMPUTER, software, manuals, fan, extras, $700 OBO. Adler, 296-4527.

AIR CONDITIONER, 4000 CFM swamp cooler, side draft, 115V or 230V, $175 OBO. Chavez, 842-6374.

PUSH MOWER, 15" blade, $30. Renschler, 293-5782.

COLEMAN CANOE, 15', 2 paddles, 10 lb. anchor, car carrier kit, all hardly used, $230 OBO. Skogmo, 296-8869.

DINETTE SET w/leaf, formica top, 6 chairs, $85. Massey, 884-4451.

BUCKSKIN QUARTERHORSE, double registered, 2 yrs. old, show quality, gentle, $2000 OBO; camper portapotty, $18; portable barbeque, $4.50. Cole, 298-1464.

STEREO COMPONENTS: Kenwood amplifier, KA-6100, $100; Sound Concepts SD-550 sound expander, $400; Technics tuner, ST-9030, $200; Soundcrafter pre-amp. Reinarts, 883-5396.

POOL TABLE, fullsize, $50; ping-pong table top, $10. Bailey, 821-4394.

BEDROOM CHEST OF DRAWERS, white, $35. Oravecz, 281-3667.

CHILD'S Strollee "Wee Care" car seat, $25. Noel, 844-4491.

SEA KING 6.9 hp outboard, $150; Coleman 2-burner camp stove, $20; wine rug, 10' x 11', $25; wool rug, 7 1/2' x 9', $10. Horton, 883-7504.

PIANO, Young Chang, ebony finish, like new; office desk, 1 yr. old, $75. Kubiak, 298-9590 afternoons.

ANTIQUE WOOD FOUR-POSTER BED, $40; range hood, stainless, Sears Best, 30" wide, $90. Barton, 268-7349.

ENGLISH SPRINGER SPANIEL PUPS, field bred, AKC, championship lines, sire and dam on premises, $150. Jones, 897-0719.

STORM WINDOWS, inside mounting, for Mossman Pasadena model, call for sizes and prices; outside combinations, 36" x 48", $40. Luikens, 881-1382.

CANOE PADDLES, 63", 1 1/8" aluminum shaft, removable polypropylene 7" x 15" blade, 1 lb., French-made "Sevylor", $8 ea. Stamm, 255-2640.

ORGAN, Thomas tube-type, $100; ping-pong table with all equipment, $50. Roeschke, 298-0365.

PHEASANT FEATHERS for fishing flys, full skins with tails, $6.50 ea. Murphy, 881-1520.

GE ELECTRIC RANGE, w/self-cleaning oven. Schultz, 255-0686.

SEARS KENMORE heavy-duty washer and electric dryer, avacado, $295 for pair. Graham, 831-2833.

DOORS: one exterior w/window; one glass shower, 24" wide. Van Deusen, 291-8196 after 6.

ICOM IC-730 AMATEUR RADIO TRANSCEIVER, $475; cemetery lots, Sandia Memorial Gardens, $350 ea.; Enchanted Trails membership, $2500 OBO. Rowe, 299-0961.

TWO TEDDY BEAR HAMSTERS, cage, wheel, water dispenser, house, $20. Ripi, 293-6067 evenings.

KITCHEN TABLE, 6 chairs, $50. Maestas, 831-4072 after 5:30.

BEDROOM SET, full/queen bookcase headboard, dresser w/mirror; king-size mattress and boxsprings; ceramic lamps. Connor, 293-7608 after 6 on weekdays.

DRESSER w/mirror, chest of drawers, dark pecan finish, $175 for both. Scheibner, 345-9351 after 6.

CHILD'S ROCKING CHAIR, wood, Early American, natural finish, $30. Scharnberg, 345-1523.

IRON PATIO DINETTE, $150, and swing $80; bookcase, $80; dining room set, $600; antique chairs and occasional tables. Magnani, 299-8693.

ELECTRIC TYPEWRITER, Royal Medallion II, needs cleaning, $50. Danneels, 292-1548.

TRAILER AWNING, woven canvas, 8' x 12', rod and poles, $60; golf clubs, left handed, three woods, four irons, $45. Gregory, 344-1436.

CAR TOP CARRIER, electric grinder, metal utility cabinet, nylon double air mattress, toaster, ladies size 9 all-weather coat. Levan, 821-0980.

TRANSPORTATION

'57 CHEV. AT 4-dr., $2500. Pierce, 299-2801.

'80 CHEV. PICKUP, 3/4-ton, PS, PB, AC, AM/FM, low mileage, oversized rims, $4400 OBO. Danneels, 292-1548.

'68 PLYMOUTH BARRACUDA, original paint and owner, $1500 negotiable. Silverman, 298-1308.

'76 DODGE RV, 19', sleeps 5, 30K miles, $9500. Stimmell, 299-2972.

'85 NISSAN MAXIMA GL, 4-dr., V6, FWD, loaded, sunroof, leather, etc., $13,700. Collins, 266-5868.

'85 TOYOTA Extra Cab, fully loaded, chrome rims, AM/FM cassettee, 5-spd., long bed. Otero, 865-6028.

'76 FORD PICKUP, F250, LWB, PS, PB, 390 V8, 91K miles, good work truck, $795. Baldwin, 821-5924.

'82 KAWASAKI MOTORCYCLE, 750cc, 1100 miles, black on chrome, 4-cyl., best offer. Ortega, 823-1947.

'84 KAWASAKI 900 NINJA, 16 mos. left on extended factory warranty, extras, $2395. Mott, 299-7793.

'78 CUTLASS CALAIS, PS, PB, AC, AM/FM, new tires, $1950; '77 Toyoto Celica, GT, liftback, automatic, AM/FM, $1350. Hendrick, 292-8147.

'85 YAMAHA MOTORCYCLE, Virago, 500cc, "V" twin, candy red, 3000 miles, $1895. Marchi, 296-4048.

10-SPEED BICYCLE, 24" frame, 26" tires, $50. Baney, 294-8970.

BICYCLE, 10-spd., 23" frame, $80. Ystesund, 256-3297.

BICYCLE, 21", 18-spd., Motobecane Grand Touring, $300. Shwiller, 881-6921.

'83 PULSAR Sp Cpe, 38K miles, one owner. Gunckel, 299-4867.

20" BOY'S BICYCLE, red trim, $25. Barsis, 293-5347.

'76 LAYTON TRAVEL TRAILER, 20', sleeps 6, extras, including AC, electric hitch, TV antenna, $3800. Carlyon, 299-2318.

'78 CHEV. MONZA, 40,000 original miles, standard transmission, new tires, AM/FM cassette, $2100. Carlin, 292-5428.

'83 HONDA Goldwing Interstate, full Hondaline integrated sound system (AM/FM, CB, cassette deck, passenger intercom), 16,000 miles, new tires, $4500. McEwen, 821-1374.

'83 GPZ750 KAWASAKI, 13,000 miles, tank cover, fairing, red, $2300 OBO. Edwards, 291-9046.

TRAVEL TRAILER, 21', fully self-contained, awning, rear single beds, $3200. Snelling, 821-6263.

'81 KAWASAKI MOTORCYCLE, 440 w/fairing, 3500 miles, $695 OBO. Arenholz, 298-1724.

'82 YAMAHA 750 VIRAGO, 6000 original miles, headers, under warranty, black, one owner, no accidents. Oravecz, 281-3667.

SAILBOAT, 22', Chrysler, loaded: trailer, motor, 4 sails, galley, porta-potty, lifejackets, ladder, knotmeter, more, $10,000. Reinarts, 882-5396.

'78 CUTLASS SUPREME, 2-dr., 305 V8, 60K miles, power, AC, tape, AM/FM, $1900 OBO. Young, 884-7836.

'71 DATSUN PICKUP, PL521, 1600cc, restored interior, new BFG MTs, removable stakesides, new brakes, Blaupunkt, $1475. Miller, 281-3655.

APACHE SOLID STATE POP-UP CAMPER, sleeps 6, gas/12V refrigerator, refrigerated air conditioning, stove, sink, awning, improved clearance, $1800. Pierce, 881-4382.

'79 OLDS 98, leather interior. Schultz, 255-0686.

'80 VW RABBIT, 4-dr., hatchback, 1.6L EFI, 4-spd., new Michelin radials, AM/FM, 63K miles, $1950. Conley, 298-7862.

'80 FORD F-100 PICKUP, w/camper shell, 300 CID 6-cyl., 4-spd., air, new Michelin tires, $3200. Lukens, 299-1271.

'84 NISSAN SENTRA XE, 50th anniversary, AC, PS, PB, tilt, cruise, AM/FM, louvers, $6500 OBO. Cowen, 296-5980.

'74 DATSUN PICKUP, shell, wide radials, extras, $1400. Van Deusen, 291-8196 after 6.

'69 PLYMOUTH WAGON, original owner. Shaut, 299-8569.

'84 CROSS COUNTRY MOTOR HOME, 31', extras, $39K; '78 Honda CB125, $325. Rowe, 299-0961.

'79 CHEV. MONZA, AC, PS, V6, 4-spd., hatchback, rear window louver and defroster, sunroof, $900. Crawford, 883-5545.

'74 HONDA CB200 MOTORCYCLE, not running, good for parts, best offer. Ripi, 293-6067 evenings.

'58 CHEV. NOMAD STATION WAGON, 4-dr., all original, all chrome, no dents, $1500 OBO. Landavazo, 242-5587.

'73 MERCEDES 220 DIESEL, 4-spd., manual transmission, air conditioning. Novotny, 296-7167.

'63 MERCEDES 220, engine rebuilt, parts car included. Shelton, 843-7501 or 883-4546.

'78 HONDA CB750K MOTORCYCLE, new paint, fairing, saddle bags, extras, helmet included, $1000 OBO. Garcia, 299-7803.

'72 DATSUN 280Z, rebuilt engine, 6 cyl., 200 miles, new tires and upholstery, $3200, will consider offers. Atkins, 298-5762.

'65 CORVAIR, Monza Sport Coupe, 4-spd., original owner, $1500. Wente, 299-5274.

'78 VW RABBIT, 4-dr., $1200. Hickerson, 884-8462.

'85 HONDA XR350R DIRT BIKE, trail riding only, less than 1000 miles, extras. Turner, 293-8938.

REAL ESTATE

HOUSE, 3-bdr., 1-3/4 bath, pitch-roof, brick front, sprinklers front and back, hardwood floors, new roof and stucco, Holiday Park, $93,500. Alvis, 298-3906.

UNM/MONTE VISTA, 1940s house, 2-bdr., 1 bath, hardwood floors, fireplace, sprinklers, mature landscaping, studio, patio, refinance, $78,500. Dunn, 266-2988.

NINE ACRES with telephone and electricity near Estancia, roads on three sides, $15,000 at 8% interest and 10% down. Thomas, 256-1921.

RIDGECREST AREA, 3-bdr. house, 2-bath, double garage, open floor plan, cherry paneling and trim throughout, updated, $87.5K. Mauldin, 293-3763.

3-BDR., 1-3/4-BATH, fireplace, double garage, landscaped, auto-sprinklers, 6" walls, thermopane windows, 6' yard fence, Chelwood and Copper, assumable 8-1/2%, $76,000. McNamee, 296-2142.

3-BDR. HOME, 1-3/4-bath, corner lot, dead-end street, $68,000. Moore, 296-6586.

N.E. 3-BDR., sunken tub, landscaping, garage door opener, custom drapes, bay windows, extras, $82,500. Koonce, 293-0752.

BOSQUE FARMS, 3-bdr., 2-bath, room w/FP, large 2-car garage, fully landscaped, fruit trees, screened patio, 1/2 acre. Cook, 869-6921.

COLO. RETIREMENT HOME, near Pagosa Springs, separate garage, mtn. views, $82,000. Mares, 884-4843.

BEAR CANYON MOSSMAN, 4-bdr., 2-bath, tile floors, clerestory windows, $126,500. Reilly, 821-6195.

CUSTOM 4-BDR. on twelfth fairway in Rio Rancho, assumable loan, $169,900, no realtors. Ciccarello, 892-6826 or 768-6680.

MOUNTAIN PROPERTY, 40 acres on SR344, 4 miles east of N14, wooded, electric and phone available, $88,000. Curtis, 281-3419.

TOWNHOUSE, 2-bdr., 2-bath, approx. 1000 sq. ft., 2-car garage, near golf course off Academy. Bohannon, 822-0060.

WANTED

'80-'83 MAZDA or Courier longbed pickup, low to average miles, must be good to excellent condition. Aragon, 881-4795.

PARTS for older model Jeep, need both chassis and body items. Bentz, 299-3448.

BAR STOOLS, six; swing set. Martin, 294-8010 after 5.

AVAILABLE SPACE to York or Manheim, Pa., for transporting small tools and miscellaneous items. Harris, 255-6577.

VISITING, TEMPORARY SANDIANS to sublet large 1-bdr. apartment, washer/dryer, many amenities, no deposit. Darnell, 888-2040.

PHYSICIAN'S balance scale, Navarro, 281-9610.

HOUSEMATE, share 4-bdr. furnished house in S.E. area, 1 child OK. McCoin, 262-1970.

KIDSITTER, responsible teenage girl to sit w/10-year-old girl, good swimming skills necessary, help keep house neat. Simpson, 296-4588.

SMALL- TO MEDIUM-SIZED CAR for high school graduate, $2500 or less. Hickerson, 281-2598.

WANTED TO RENT

MOTOR HOME, about one week in late August. Barnard, 256-7772.

WORK WANTED

HOUSESITTING, college junior, feed pets, watering, etc, during your vacation, references. Cook, 296-3064.

BABYSITTING, summer, experienced, reliable high school senior, references available, N.E. Heights. Maloney, 821-6661.

Coronado Club Activities

Splash Bash Next Monday

ONE OF THE BIGGEST pool parties of the year — the grand opening celebration — is on tap next Monday at New Mexico's finest pool and patio facility! Fabulous food, music, games for everybody, and the first big chance in '86 to test your water wings; it all adds up to a great way to spend your holiday. Go heavy or light on the food at the a la carte buffet, served on the patio from 11-5. It'll feature hamburgers, hot dogs, BBQ beef, grilled steak, baked beans, and all kinds of salads. There's 50-cent beer available all day too. Soundwave, with its great variety music, fills any and all musical requests on the patio, and there'll be a DJ on hand from noon-2. Gaming for all ages starts at 2. If you're feeling the heat and the sunburn is getting to you — and you don't want to be dunked one more time — you can take shelter in the ballroom, where those cool Isleta Poor Boys provide stompin' or listening music from 4-8. Yep, folks, summer is just around the corner, and here's your chance to come out and celebrate!

CALLING ALL SINGLES — The next C-Club mingle is set for next Thursday, May 29, from 5-11 p.m. Free munchies from 5-7, and 50-cent draft beer and margaritas all night. Dancing music by Soundwave from 7-11. This is where the action is, so mark your calendar right now.

WE HATE TO REPORT THIS, but the T-Bird card sharks are closing up shop for the summer after their shuffle-and-deal session on June 2. Guess they're all going on the road for three months — Las Vegas, Atlantic City, who knows? Anyway sharks, before you take off, get out there for one last grand slam, starting at 10:30 a.m. in the Eldorado room. See you in September!

SPEAKING OF THUNDERBIRDS, the RV group is headed for the wide open spaces again — this time to Cochiti Lake, May 27-29. More info from the wagonmasters of this fearless group: Duane Laymon, 822-1749; Tom Brooks, 344-5855; and Bill Minser, 299-1364.

NEXT WEEK'S TWO-FOR-ONE dinner special (May 30) features filet mignon or fried shrimp — your choice of entree, two for $14.95. Ever since that great Cinco de Mayo celebration, you've all been clamoring for more south-of-the-border music; Spinning Wheel belts it out next Friday after dinner. Two weeks from tonight, on June 6, you have your choice of prime rib or poached halibut on the two-for-one special. Afterward, it's country/western lessons from 7:30-8:30, guaranteed to get you in shape for dancing to the strains of the Isleta Poor Boys from 8:30-12:30. Don't forget to call the Club office (265-6791) for dinner reservations.

LEADERS OF THE PACK — the Coronado Wolfpack, that is — take heed! The Wolfpack Board will meet at the Club from 5-6:30 on Tuesday, June 3. It's rumored that the head wolves will be discussing future fun-filled events for those intrepid Lobo fans. If you'd like to hear what they're howling about, come on out of your lair and listen in.

VARIETY NIGHT on May 7 features the world's most famous collie in ''Lassie, Come Home'' on the big screen starting at 6 p.m. A pizza/hot dog buffet is served starting at 5. Here's a chance for the whole family to enjoy low-cost food and entertainment. As usual, the movie is free. And bring your handkerchiefs; ''Lassie'' is a real tear-jerker!

C-CLUB CATERING HONCHO Maggie Pappas invites you to join the fun next Monday, May 26, at the grand opening party in the pool/patio area. She's planned a super a la carte buffet (served from 11 a.m.-5 p.m.) featuring the likes of hamburgers, hot dogs, grilled steak, BBQ beef, etc., etc. Maggie's also your contact if you'd like to plan your next private party at the pool. Give her a call at 265-6791.

THE C-CLUB'S MIXED BOWLING LEAGUE has space for some new bowlers. Sign up with John Malmstrom, 822-0228, or Charlie Kaspar, 821-5521.

TRAVEL — Summer, fall — you name it. The C-Club Travel Committee has cooked up a bunch of get-away-from-it-all trips that will satisfy the most finicky travelers. A few opportunities:

Southern Colorado — Time's a-wastin' on this one. Deadline for reservations is June 11. This bus tour to Mesa Verde and Durango packs a lot of action into three days, July 11-13. A $176/person fee includes a tour of the cliff dwellings at Mesa Verde, two nights at the new Rodeway Inn in downtown Durango, two cocktail parties, three breakfasts (one on the bus), one lunch, two dinners (including the big Bar-D BBQ and Western show), snacks and drinks on the bus, rides on the Durango/ Silverton narrow-gauge train and the Alpine slide at Purgatory Ski Area, taxes and tips. Can't beat the price, and the spectacular scenery is free.

Fall Trips — A couple of trips are planned in October. The first, to Laughlin (Nev.) and Lake Havasu City (Ariz.), Oct. 13-16, lets you satisfy that craving for action at the gaming tables at the Edgewater Casino/ Hotel and other hot spots in Laughlin. You'll have a chance to see London Bridge in LH City (yes, you really will!), and shop in the quaint English village adjacent to the bridge. Trip price of $150/person includes three nights at the posh Edgewater, free breakfast or lunch buffet of your choice, round-trip motorcoach fare, taxes, tips, and admissions. Reservation deadline is Aug. 12.

A trip to the Ozarks for a look at some spectacular fall foliage is scheduled Oct. 18-24. In addition to the fall colors, visits to the region's many other attractions are planned. Some of them: Tulsa's Gilcrease Museum, housing one of the best collections of western art in the world; the Will Rogers Memorial in Claremore, Okla.; Miles Musical Museum and the Great Passion Play in ''spa city,'' Eureka Springs, Ark.; exotic animals in Branson's Wilderness Safari (Mo.); Shepherd of the Hills outdoor drama in Silver Dollar City, Mo.; and the Fall National Crafts Festival in Silver Dollar City. The $637/person tab includes all of the above, plus much more: round-trip air fare to Tulsa, six nights' lodging, deluxe motorcoach transportation, flight insurance ($100,000), two special dinners, hillbilly and popular music shows, and all admission fees. Don't miss out on this one!

FASTEST FILER OF FLIMSIES? Melanie Mack, a Work Experience Trainee (and former Youth Opportunity Trainee) in Staff Recruiting and Employment Division 3531, was a national winner in the recent Office Education Association competition in Columbus, Ohio. She ranked eighth in the records management category (terminology plus alphabetic, numerical, and geographic filing). A senior at Del Norte, Melanie plans to attend UNM this fall and major in marketing management.